

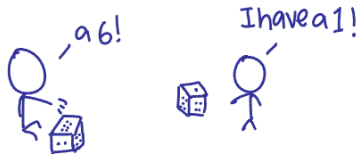
PART I
MATH GAMES

Game 1: Addition

1. Each group is given 4 dice.



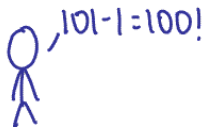
2. Group members roll the dice to generate numbers.



3. Either add, subtract, multiply, or divide those numbers to try and reach exactly 100.



4. First group to reach 100 wins.



Leadership Game 1: Addition

Key Leadership Understanding

Leaders depend on others. Interdependence and teamwork are crucial elements in leadership.

Math/Science Concepts Applicable

Addition

Equipment/Logistics

Four dice for every group of participants

Group list

Recorder of group scores

Time Required

As long as it takes for the first group to reach a total of 100

Game Objective

Be the group to find the fastest way to reach 100 with a pair of dice each

Group Size

Any number about two (but preferably less than 10).

Procedure

Group participants in teams of two to four. Each participant takes turns tossing the dice and adding the total of both dice. The score the participant gets is the total for that round. Each score is added to the earlier

score. The game is over when a team reaches a predetermined score of 100.

Possible Variations

Why restrict the players to just addition? You may get the players to make use of multiplication, division, and subtraction with the values they generate with the dice. Get them to think carefully with their values before they calculate. Alternatively, the predetermined score can be altered.

Process

- What difficulties did you face as a group?
- What feelings did you experience when you failed to reach 100/ exceeded 100?
- Who was the leader among the group? Would having a leader help in the process?

Practical Application

- What do you think are the important elements of teamwork?
- What are we doing to build team unity and confidence?
- What takes us so long to recognize the true extent of our problems?

Game 2: Guess the Number

1. Facilitator thinks of number.



2. Group members ask yes/no questions.



3. Facilitator answers, group members continue asking questions.



4. Group guesses the number.



Leadership Game 2: Guess the Number

Key Leadership Understanding

Leaders listen and ask pertinent questions. The art of listening and asking questions is important in being an effective leader.

Math/Science Concepts Applicable

Approximation and patterns

Equipment/Logistics

List of participants

Recorder of the number of questions raised and by whom

Time Required

As long as it takes for the first person to achieve the game objective (approximately five minutes)

Game Objective

Be the first participant to correctly articulate the number determined by the volunteer

Group Size

20 to 30

Procedure

Select a volunteer. Volunteer chooses a number mentally and says, "I'm thinking of a number." Each participant will get one chance to ask a "yes or no question". No statements are allowed.

Example: Is the number an even number? Is it above 60?

Participants need to keep track of the clues in their heads. The participant who guesses the number correctly with the least number of questions receives a small prize.

Participants who ask repeat questions will be made to do a forfeit, since they have not been listening to the discussion.

Possible Variations

Using questions like “Is the number greater/smaller than...?” will make it too easy to identify the number. Restrict each type of question to be asked only once throughout the entire game. So, we can ask questions like:

- Is it a 2-digit number?
- Is there a digit “1” in the number?

NOTE: For advanced players only. Success not guaranteed.

Process

- What feelings did you experience throughout the game?
- Question for volunteer: What were some of your thoughts as they were asking you the questions?
- What facets of good communication were demonstrated here?

Practical Application

- What does this activity tell you about communication with another individual?
- Why do we have so many problems with being patient?

Game 3: "Beengo!"

1. Facilitator calls out number between 1 and 75.



2. Groups circle that number on Beengo card.

2	62	12	25	61
10	65	38	75	9
73	4	22	43	8
60	7	37	19	67
72	54	36	16	40

3. When numbers in a line are formed, a letter is gotten.

2	62	12	25	61
10	65	38	75	9
73	4	22	43	8
60	7	37	19	67
72	54	36	16	40

B

2	62	12	25	61
10	65	38	75	9
73	4	22	43	8
60	7	37	19	67
72	54	36	16	40

BE

4. First group to form the word "Beengo" wins.

2	62	12	25	61
10	65	38	75	9
73	4	22	43	8
60	7	37	19	67
72	54	36	16	40

BEENGO!

Leadership Game 3: “Beengo!”

Key Leadership Understanding

Leaders seek to fulfill the goals set for the team. Leaders direct the team’s strategy.

Math/Science Concepts Applicable

Multiplication and division

Equipment/Logistics

Beengo card (five rows with five squares per row)

Marker pen

Pieces of papers with simple multiplication and division expressions

Time Required

20 minutes

Game Objective

Be the first group to have all three team players hit “Beengo!”

Group Size

Four to five

Procedure

There are four Beengo cards for the four players in a team. On each Beengo card, there are numbers ranging from 1 to 75. The numbers on each card for each of the four players are different.

The facilitator gives a multiplication and division equation. All the four players will try to solve the equation. The player with the answer circles the number on the Beengo card. When a player has answers forming a row either horizontally, vertically, diagonally or with four corners, he or she has got a “Beengo!”

The winning group is the group that manages to have all three of their players hit “Beengo!”

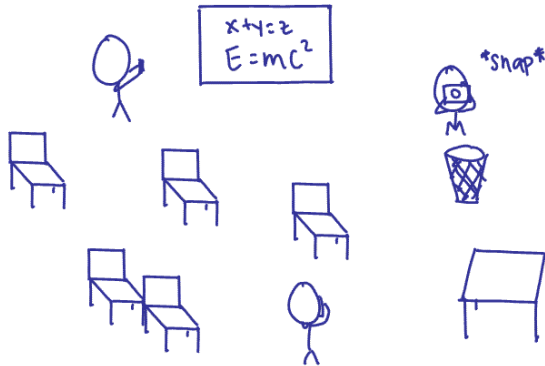
Process (Questions for group leader)

- What did you have to do to ensure that everyone in your group completes the Beengo card as fast as possible?

Practical Application

- What does this activity tell us about working in teams?
- How are you setting your course for the team?
- What are you doing to build team unity and confidence?

Game 4: Symmetry



Take as many photos of symmetrical objects
as possible.

Leadership Game 4: Symmetry

Key Leadership Understanding

Leaders act with integrity and model the way. They show a good example for others.

Leaders' behaviour reflects the type of leader they are. As seen in symmetrical objects—there is similarity and perfection in the reflection.

Math/Science Concepts Applicable

Symmetry

Equipment/Logistics

Any location

Time Required

20 minutes

Game Objective

Be the first group to find (and take pictures of) a fixed number of symmetrical objects within a time limit

Group Size

Three to four

Procedure

Divide participants into groups of three. Give each group a digital camera, or ensure that each group has a camera phone. Provide a time limit of

20 minutes for the groups to search in the compound for symmetrical objects—architectural designs, rooms, ornaments, etc. They are to take pictures of the symmetrical objects with their camera.

Possible Variations

Bonus points may be given if players are able to find symmetrical objects of a particular shape—e.g. cylindrical, pyramidal, etc. (up to the facilitator’s discretion).

Process

- Was it difficult/easy to find symmetrical objects in school?
- What were your group’s initial feelings when embarking on the activity?

Practical Application

- Why is symmetry important in our world today?
- What do symmetry and leadership have to do with each other?
- If our behaviour reflects our character, and role modeling is important, what challenges are we facing where our integrity might be questioned?
- What is the behavioural or ethical code that most people of your age live by?

Game 5: 7 up with a Twist!

1. Numbers have to be said in ascending order when going clockwise.

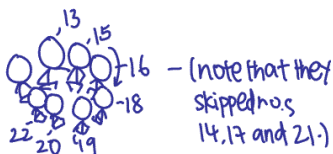


2. Numbers to be said in descending order when going anticlockwise.



3. Skip any number that either
(a) has a 7 as one of its digits, or
(b) is a multiple of 7!

...



If you say the wrong number, you get to do a forfeit!

Leadership Game 5: 7 up with a Twist!

Key Leadership Understanding

Leaders listen actively and are disciplined in their approach.

Math/Science Concepts Applicable

Multiplication

Equipment/Logistics

Two game masters to monitor each group

Time Required

15 minutes

Game Objective

Be the first group to finish counting the multiples of 7 right up to 98 (either in ascending or descending order).

Group Size

Five to Six

Procedure

Two groups of players will compete. Each player in the group will take turns to count in multiples of 7 within 0 to 100 (7, 14, ..., 98), in ascending or descending order. The respective group's game master will require the group to start all over again for any mistakes or hesitation that the group members make.

Process

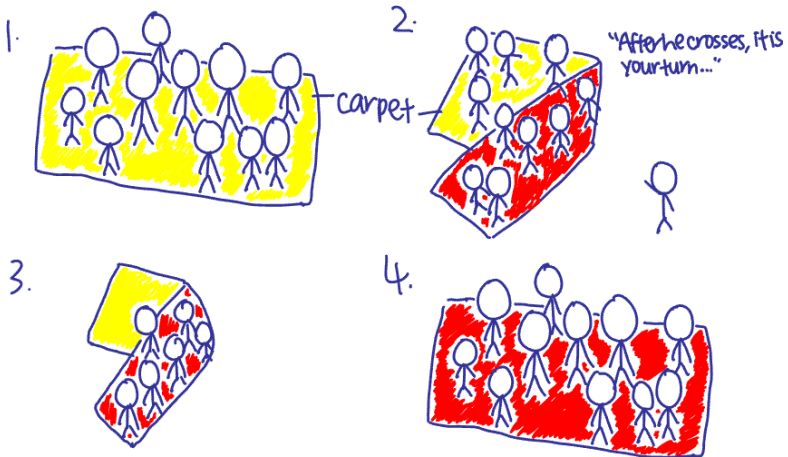
- What was your main difficulty in counting in multiples?
- Did the process of counting in multiples help you or hinder you? Why?
- How did you feel when you had to recount or start all over?

Practical Application

- What lessons do you learn about leadership from this game?
- Were there times when you felt like giving up in your project?

Game 6: Aladdin's Magic Carpet

Everyone stands on a carpet and tries to flip it over without anyone stepping off the carpet.



Leadership Game 6: Aladdin's Magic Carpet

Key Leadership Understanding

Integrity in leaders is all that matters.

Math/Science Concepts Applicable

Geometry

Equipment/Logistics

One large piece of groundsheet/newspaper/cardboard to function as the "carpet"

Time Required

15 minutes

Game Objective

Be the group to flip the "carpet" without anyone stepping out of it in the fastest time possible

Group Size

10 to 12 (highly dependent on the size of "carpet").

Procedure

All members of the group have to stand on the "magic carpet". The aim of the game is to find a way to flip the "carpet" over without anyone stepping out of it in the quickest time. Once any member steps out of the "magic carpet", the group will have to start all over again.

Possible Variations

Teams can be given certain restrictions, such as not being allowed to speak or being blindfolded during the task.

Space limits can also be factored into the game. For e.g., game instructors can reduce the amount of space allowed for team members to stand on by tearing the “carpet” after a certain duration of time.

Process

- Did anyone view the task as impossible?
- How did team members try to keep everyone on the carpet?
- Did the group cheat?


Practical Application

- What situations exist when our integrity is challenged?
- When was the last time you blundered and had your integrity challenged?
- As leaders, one should have the integrity to keep to the rules of the game, and admit our own mistakes. When was the last time you were challenged to be honest?
- What actions would we take when our integrity is challenged?

Game 7: Line Up!

1. Everyone stands on a bench, blindfolded. Facilitator shouts a command.

○ -Line up according to height!

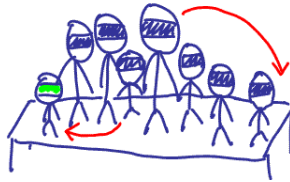


2.



Everyone reorders himself or herself according to height.

3.



4.



Leadership Game 7: Line Up!

Key Leadership Understanding

Leaders give clear and precise instructions.

Team members need to co-operate with their leaders by listening and carrying out their instructions.

Math/Science Concepts Applicable

Measurement

Equipment/Logistics

Blindfolds

Time Required

30 minutes

Game Objective

Be the first group to line up according to given criteria

Group Size

10 to 12 per bench

Procedure

Group members will be blindfolded for this activity.

The group is expected to line up according to height, in ascending order, i.e., from the shortest in front to the tallest at the back. Thereafter they will

be asked to do it the other way round, i.e., from the tallest in front to the shortest at the back.

The fastest group to line up accordingly wins.

Possible Variations

The group can be asked to line up according to other criteria such as birthdates, weight, age, etc.

The group can also be asked to line up according to a given set of criteria without being blindfolded but are forbidden to talk.

Alternatively, the group can be told to line up on an elevated platform (e.g., a bench). They will have to restart the game if any member happens to fall off the platform.

Process

- How vulnerable did you feel while being blindfolded?
- Was there anyone who was willing to lead the group?

Practical Application

- What have you learnt about leadership in this game?
- What happens when you have more than one member trying to lead the group?
- How do you ensure accountability by team members?

Game 8: In Step with the Times!

1. Each person is given 2 pieces of newspaper.
2. As a group, try to get from point A to point B by stepping on them.



3. The group moves forward by passing newspaper from the back to the front.



4. When the group reaches point B, do the same thing back to point A!

Leadership Game 8: In Step with the Times!

Key Leadership Understanding

Leaders are life long learners. They stay current in the news. They look for trends and are open to new approaches.

Math/Science Concepts Applicable

Distance

Equipment/Logistics

Newspapers (preferably with pictures)

Time Required

10 minutes

Game Objective

Be the first group to cross the finishing line

Group Size

Six to eight

Procedure

The goal of this game is to get from point A to point B, stepping on newspaper.

Divide the group into two teams. Each player is given two pieces of newspaper to move from a starting point A to the finishing line B. To move from A to B, the player has to use the two pieces of newspaper. He or she

places one piece on the ground, steps on it, places the other piece before he or she makes the next step. Basically all movements have to be made on the pieces of newspaper. The process continues until the player reaches point B after which the next player from the team will repeat the whole process.

The team with all the players at point B in the shortest period of time wins!

NOTE

When the players are done, the facilitator will collect back all the newspapers and ask the players with regard to the content of the newspapers.

Possible Variation

After reaching point B, the whole team repeats the same process to get back to A.

Process

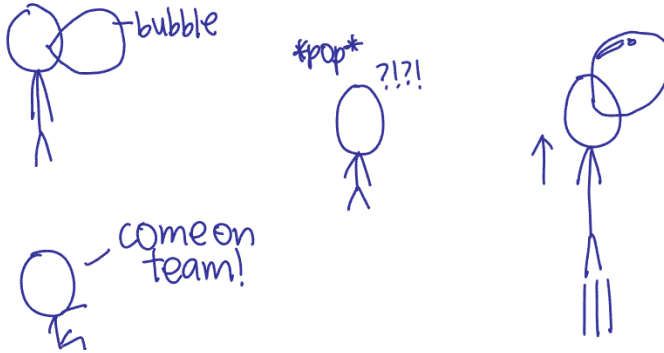
- How did you feel about stepping on newspapers?
- Did anything on the pieces of newspaper manage to catch your attention?

Practical Application

- How much attention do you pay to current affairs?
- How are newspapers and the media important in our lives?
- How are you developing your skills and confidence?
- How important is it for leaders to be observant and careful in the things they do?

Game 9: Whose Bubble Is It?

Try to blow the biggest bubble possible:



Leadership Game 9: Whose Bubble Is It?

Key Leadership Understanding

Leaders give hope to others. They are optimistic people.

Math/Science Concepts Applicable

Circumference of circle

Equipment/Logistics

Chewing gums
Chairs for players

Time Required

20 minutes

Game Objective

Be the group to produce the biggest bubble or have the greatest number of team players seated

Group Size

Six to eight

Procedure

Players are divided into groups. Provide each player with a piece of gum and a chair. Each group forms a circle with teammates facing each other.

When the facilitator commences the game, everyone (in standing position) tries to blow a bubble. Each player gets to sit after blowing a bubble. Within a certain time, the group with the greatest number of members seated wins!

Alternatively, the group with the biggest bubble wins.

Process

- How did you feel each time someone sat down?
- How did you feel when your bubble burst?
- After you get seated, how did you feel when others in your team are still trying to blow their bubble?

Practical Application

- Have you experienced seeing your vision or hopes for the team collapse?
- How can you inject hope into the team when a cause seems lost?

Game 10: Number Game

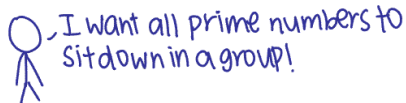
1. Each person is allocated a number.



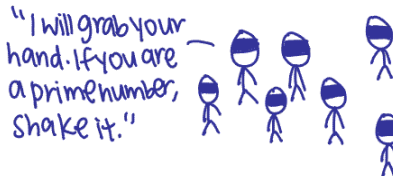
2. Only 1 person in the group is allowed to talk; everyone is blindfolded.



3. Facilitator will shout a command for group members to follow:



4. The group has to follow the facilitator's command as fast as possible.



5. The person who can talk has the job of coordinating everyone!

Leadership Game 10: Number Game

Key Leadership Understanding

Leaders solve problems and think out of the box.

Leaders listen and are good followers.

Math/Science Concepts Applicable

Knowledge of different types of numbers e.g., prime numbers, etc.

Equipment/Logistics

Blindfolds

Time Required

20 minutes

Game Objective

Be the first group to finish the obstacle course

Group Size

Six to eight

Procedure

All the players are blindfolded. Each player is allocated a number by the facilitator. The numbering relationship (e.g., consecutive numbers, prime numbers, odd numbers, even numbers, negative numbers, in multiples, etc.) is decided by the facilitator.

Only one player in the group called the coordinator is allowed to talk. The coordinator will line team members up in ascending or descending order according to the facilitator's instruction.

The main challenge is for the coordinating player who can talk to communicate with the rest so that he or she can arrange the group members according to the facilitator's instructions.

Process

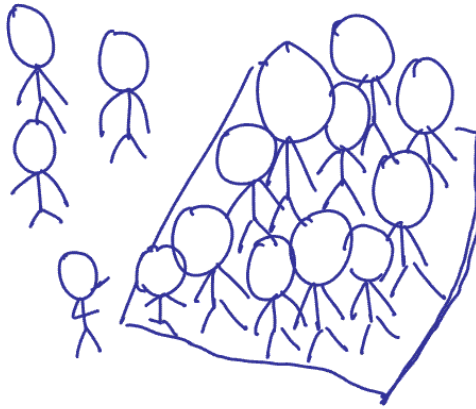
- Was one leader or coordinator sufficient?
- Did communication play a huge role in the group? How?
- Why do you think you could or could not complete this activity?

Practical Application

- Why is listening so important?
- How is a leader sometimes a follower?
- How can one be a good follower?

Game 11: All on A Square!

Try to squeeze as many people on the mat as possible!



"Squeeze!"

Leadership Game 11: All on a Square!

Key Leadership Understanding

Leaders are confident risk takers. They are able to adapt to changes.

Math/Science Concepts Applicable

Estimation of area

Time Required

15 to 20 minutes

Equipment/Logistics

A large square mat

Game Objective

Be the group to keep group members within the given mat

Group Size

Five to eight, depending on the size of mat

Procedure

Each group is given a mat of the same size.

All the members of the group will start the game by standing on the mat. The facilitator will assign a smaller mat area by, for example, asking the team to fold the mat into half. The group will be asked to set a target above the minimum stipulated by the facilitator as to the number of members which they think can fit onto the mat. Within a given time, the team will then seek to achieve their target.

No parts of their bodies are allowed to go beyond the area of the mat. If they reach their target, 10 points can be awarded for each team. The team with the greatest number of players will be given extra points, but no points will be awarded if the team fails to meet its target (this is to discourage teams from making unrealistic targets without a proper estimation).

After each round, the facilitator can proceed to continue reducing the size of the mat.

Possible Variations

The mat can be circular, triangular or rectangular to make the game interesting.

Process

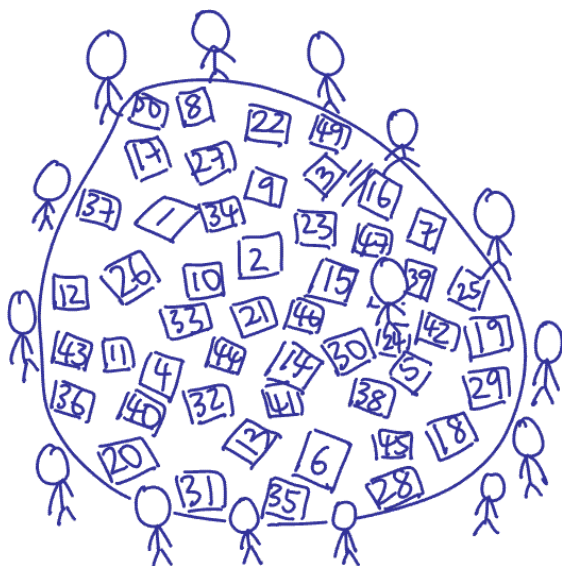
- What was the main difficulty in this game?
- Was everyone comfortable with playing the game? If not, what could be done?
- In what way did this game demand cooperation among members?

Practical Application

- When was the last occasion when you felt uncomfortable by changes?
- How did you overcome this challenge of change?

Game 12: Station Omega

Tap the numbers in ascending
or descending order.



Only one person is allowed to
be in the circle at any one time.

Leadership Game 12: Station Omega

Key Leadership Understanding

Teamwork helps to fulfill the vision of the team.

Leaders allow others to act by giving them opportunities to demonstrate their strengths.

Math & Science Concepts Applicable

Knowledge of mathematical concepts, such as perfect squares and prime numbers

Equipment/Logistics

Chalk

Stopwatch

A boundary with 50 numbers drawn within it in random order

Time Required

20 minutes

Game Objective

Be the first team to finish tapping

Group Size

Five to six

Procedure

Each team will be assigned a boundary of numbers. All the team players

are to station themselves outside the boundary. The facilitator will provide a number e.g. 1 and the mathematical relationship e.g. prime numbers. Team players will take turns to enter the circle to tap on all the numbers, in ascending order (e.g., 1, 3, 5, 7, etc.), belonging to the mathematical relationship given by the facilitator. The team that completes the task within the shortest time wins the round. The facilitator will then proceed with another number e.g. 2 and mathematical relationship e.g. even numbers.

Only one member is allowed in the boundary to perform each round.

Possible Variations

There are many mathematical relationships that the facilitator can provide e.g. perfect squares, multiples, etc. To increase the level of difficulty, team members may be asked to tap in descending or ascending order, in which case the facilitator will need to start with the biggest number.

Alternatively, alphabets can be used instead of numbers in the boundary, where players are asked to spell out scientific terms forward or backwards.

Process

- How could you have been more effective in this activity?
- What were some of your strengths and/or weaknesses?
- Was teamwork evident in the game?

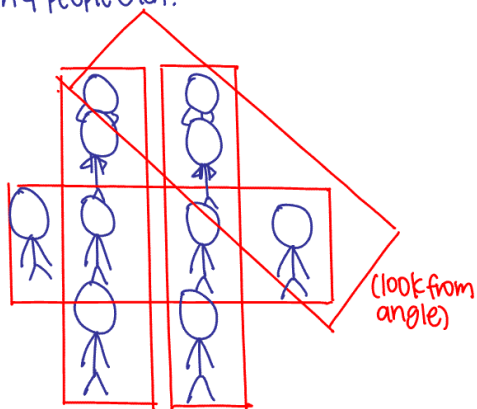
Practical Application

- Do we allow others to show their strengths?
- How do we help others overcome their weaknesses?

Game 13: Shape Me!

Come up with as many ways as possible to line 10 people to form 4 lines with 4 people each?

e.g.



Leadership Game 13: Shape Me!

Key Leadership Understanding

Leaders overturn assumptions and think out of the box to resolve problems.

Math/Science Concepts Applicable

Addition, subtraction, multiplication and division

Equipment/Logistics

Paper and markers for each group

Time Required

20 minutes

Game Objective

Be the first group to come up with as many ways to do the formation(s) within a given duration

Group Size

10

Procedure

Each group of 10 has to explore as many ways as possible to form four lines such that there are four persons in each line using all the 10 members.

Process

- What were some challenges that you face in this activity?

- How did you overcome these challenges?
- What was needed in the group to think of the formation(s)?

Practical Application

- What response do you often have when people tell you that you can do better?
- Why is it important to have a different perception of things when one is engaged in a project/group discussion?

Game 14: Multi-Division

1. Foot-soldier



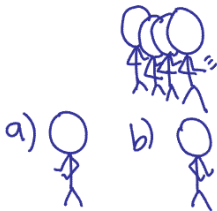
2. Calvary



3. Cannon Volley



4. War galley



5. Fortress



Leadership Game 14: Multi-Division

Key Leadership Understanding

Nurturing and expanding the pool of leaders in an organisation is an important process to ensure continuity.

Math/Science Concepts Applicable

Division and number bases

Equipment/Logistics

A big open space

Time Required

20 minutes

Game Objective

Be the one to remain in the game

Group Size

20

Procedure

Demonstrate the following five commands to the group.

Foot-soldier: Stand at attention

Calvary: Two players stand side-by-side, horse-riding

Cannon volley: Two players kneel on the ground, and a third player leaning on their shoulders

War galley: Four players in a row, “rowing” a boat
Fortress: Five players stand back to back, stamping their feet

Whichever command is given by the facilitator, the players will have to demonstrate these commands. For example, if the command is “War gallery”, players will have to arrange themselves in groups of four before they demonstrate the command.

Players who do not follow the commands successfully are pulled out of the game. The last player to remain in the game wins!

Possible Variations

The actions and commands can be changed and manipulated according to the event or theme.

Process

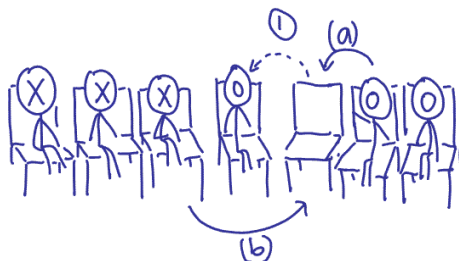
- How did you involve others to stay in the game?
- How did you feel about needing others to stay in the game?
- What did you do to increase or reduce your group size according to the commands given?

Practical Application

- What strategies do you employ to expand your group size?
- How do you persuade or recruit others to join your cause?
- How are we multiplying and growing the strength of our organisation?

Game 15: Another PIE Jam

Try to get all the 'X's to switch places with all the 'O's.



This can be done through either (a) moving to an adjacent seat or (b) leapfrogging over another person.

Leadership Game 15: Another PIE* Jam

Key Leadership Understanding

Leaders sometimes step back and allow others to proceed first.

Leaders are creative in problem solving.

Math/Science Concepts Applicable

Problem solving

Equipment/Logistics

Open space

Time Required

20 minutes

Game Objective

To swap places with the other team

Group Size

Two groups of four to five participants each

*Pan Island Expressway. The name of Game 15 is contextually Singaporean, with reference to one of Singapore's better known expressways.

Procedure

X	X	X	X		O	O	O	O
---	---	---	---	--	---	---	---	---

Participants in the two teams, “X” and “O”, get to line up as shown. All the participants marked “X” can only move to the right, and those marked “O” can only move to the left. There can be movement only when the adjacent square is empty or that the square beyond the adjacent square is empty, for which the player can “hop” to. Participants “X” and “O” have to figure out a way to mentally swap their places in the end.

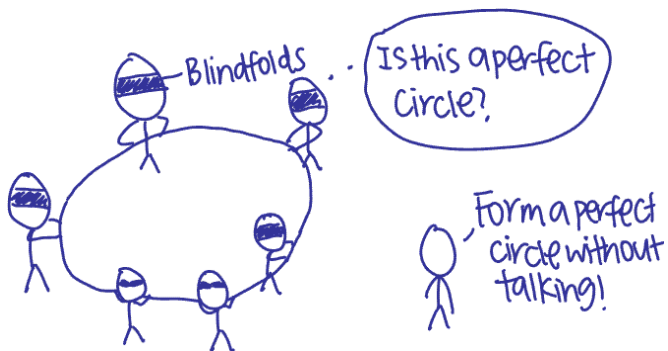
Process

- How did you feel having to step back when you tried to forge ahead?
- How did you feel about this challenge of stepping into the space of another person?

Practical Application

- What does this activity show you about team work and leadership?
- What actions do people make when they get impatient?
- What are we facing right now that is bringing us closer together?
- How can we keep people moving forward in striving for excellence?

Game 16: Blindfold Polygons



Leadership Game 16: Blindfold Polygons

Key Leadership Understanding

Courage is necessary in any leadership endeavour. Only with courage can leaders overcome difficulties.

Trust is also crucial. Leaders must trust and depend on each other.

Math/Science Concepts Applicable

Shapes and sizes

Equipment/Logistics

One long-looped string
Blindfolds

Time Required

30 minutes

Game Objective

Be the fastest group to form the required number of shapes

Group Size

Six to eight

Procedure

Participants are blindfolded, while holding part of a long-looped string. Without saying any words, they must use the string to form some simple

shapes (e.g., hexagon, octagon, triangle, squares, circles, etc.), as required by the facilitator.

Demerit points may be given if the participants request for permission for one of their team members to see or speak.

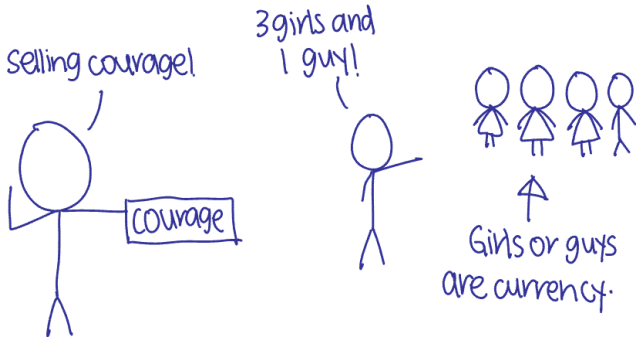
Process

- How did you feel when you were blindfolded?
- How many of you attempted to sneak in a view?
- What were the difficult challenges in this activity?
- How did you overcome the challenges?
- How did you feel when you could not speak to help your team even when you wanted to?

Practical Application

- What situations around us are we avoiding or afraid to confront?

Game 17: Money Mind



Leadership Game 17: Money Mind

Key Leadership Understanding

Leaders are valuable assets. Leaders are principle-centred.

Math/Science Concepts Applicable

Addition

Equipment/Logistics

10 auction items representing each of the following leadership qualities—trust, courage, responsibility, respect, diligence, courage, perseverance, humility, confidence and compassion

Time Required

20 minutes

Game Objective

Bid for as many auction items with the given amount of money

Group Size

Five to six

Procedure

Each auction item represents a leadership trait (e.g., trust, courage, etc.). Give each group a pre-determined amount of money. Each group will have to decide on which auction item (or leadership trait) they want to bid and for how much.

This exercise will get the group to decide which value they believe to be most important to them. Their debate about values will also mean that the group might be divided over how their monetary resources are used.

Process

- How did you feel when you lost a value?
- How did the group decide which value was important?

Practical Application

- What does this activity tell you about values in a leader?
- Are values important to a leader? Why or why not?
- Which is the value that we hold onto in trying situations?
- What is the code that you live by?

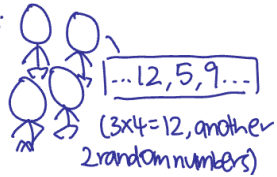
Game 18: Momentum

This is a multiplication game that speeds up as it goes on.

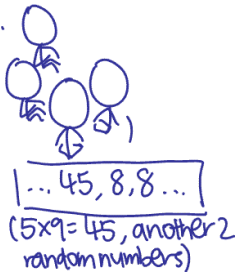
1. starting group



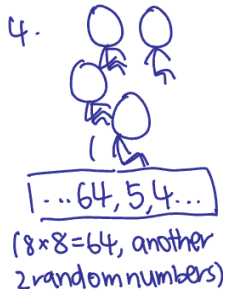
2:



3.



4.



Leadership Game 18: Momentum

Key Leadership Understanding

Leaders are not afraid to take charge. They energize the team and keep up the momentum.

Equipment/Logistics

Nil

Math/Science Concepts Applicable

Simple multiplication

Time Required

30 minutes

Game Objective

Be the last group to remain in the circle

Group Size

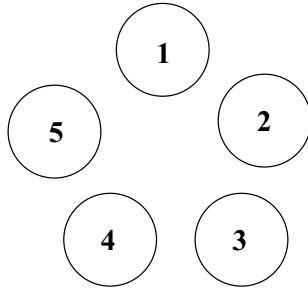
Five to eight

Prior Preparation

Nil

Procedure

Have each group sit together in a “circle”, such that each group can see other groups.



The facilitator will start by providing two numbers between 1 to 10 (e.g., 5 and 9). The first group will then have to say “45” (because 5×9 is 45) and pick another two random numbers between 1 to 10 (e.g., 2 and 4). The 2nd group will have to answer “8”, and so on. They are to answer immediately after the 1st group finishes, so it becomes like a rhythm. In this example, what you will hear is something like: 5, 9, 45, 2, 4, 8, etc.

The 1st group which breaks that rhythm is disqualified from the game, or they will have to do a forfeit to stay in the game.

The catch is that whatever it is, the group must chant the numbers together in unison. If one member chants the wrong answer, the group’s rhythm will be broken as well.

Possible Variations

The game can be sped up to increase the difficulty level.

Process

- How did you feel when one group member’s error caused the whole team to falter?
- How would you do this task differently the next time?

Practical Application

- What are the biggest difficulties in taking action when you face high levels of emotions like fear?
- What kind of situations call for encouragement to be given and how can we best do it?
- How can we press things forward?
- What lessons can you gather about leaders and teamwork?

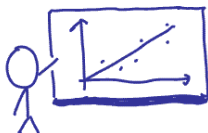
Game 19: Graphs

1. Come up with a survey question and poll the class about it.



"How many people have an allowance of more than \$20 a week?"

2. Graph your results and present them to the rest of the class.



"There is a positive correlation between your allowance and your grades!"

Leadership Game 19: Graphs

Key Leadership Understanding

Leaders know their fellow leaders and teammates well. They know each other's strengths to synergize them.

Math/Science Concepts Applicable

Graphing skills, tabulation and data interpretation

Equipment/Logistics

Graph paper and mahjong paper
Stationery
Computer
Projector
Microsoft Excel

Time Required

About one hour

Game Objective

To find out about the preferences of others and accept the differences without unfair judgment

Group Size

Three to four

Procedure

Each group member comes up with a question that he or she wants to ask

the teammates. Questions asked should elicit responses with regard to team members' interests and preferences—questions concerning eye colour, birth dates, and number of family members, etc. Members are encouraged to be as creative as possible in the types of questions they ask and how they tabulate their responses.

Groups are to present their results in the form of graphs to be presented to the other groups. Groups are challenged to show their results in a creative way (e.g., if everyone's favourite song is the national anthem*, they could sing it during the presentation, or even develop a skit/play/musical to present the data).

Process

- What was fun about this activity?
- What did you learn about your fellow teammates?
- What facets of good communication did you see being demonstrated here?

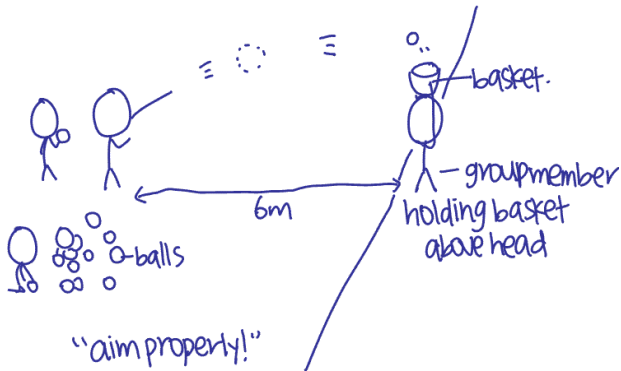
Practical Application

- What could be done to improve the communications and get things done more quickly and efficiently?

*Players are to be sensitive about the national anthems of their group members.

Game 20: Angle of Elevation

Players lineup to try throwing the ball into the basket.



Leadership Game 20: Angle of Elevation

Key Leadership Understanding

Leaders are responsible for all members in the team.

Leaders are open to diverse viewpoints.

Math/Science Concepts Applicable

Distance and angles of elevation

Equipment/Logistics

100 coloured balls and one basket per team

Time Required

20 minutes

Game Objective

Be the group with the most number of balls in the basket

Group Size

Five to six

Procedure

Players are divided into two groups. The goal of each group is to get coloured balls into their basket.

Have two players hold their basket on their heads. They are allowed to tilt or lift the baskets to try to catch the balls which their team members toss.

The thrower and the basket handlers are about six metres away from each other. (Draw a line to demarcate the distance.)

All the coloured balls have to be tossed in the given time. The team with the most number of balls in the basket is the winner.

Possible Variations

Only overhand throws or underhand throws are allowed.

Process

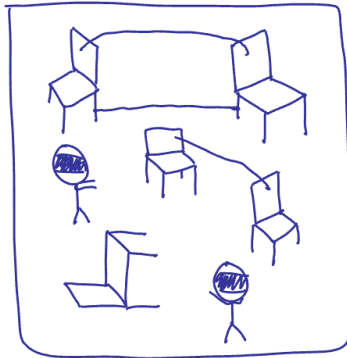
- How did you feel throughout the game?
- How did you (basket holders) feel when some of the balls missed your basket or hit you?

Practical Application

- If each coloured ball refers to a team member with a different viewpoint, how would you respond to this team member?
- If each coloured ball refers to a team member, how would you feel about the loss of each team member?
- How can we demonstrate a general respect for each other's diverse talents?

Game 21: Danger Zone!

Guide the blindfolded people across the obstacle course



LEFT 2 STEPS!



Navigating the maze

Everytime they touch an obstacle, they will be given three simultaneous equations.



Solving simultaneous equations at the end

Leadership Game 21: Danger Zone!

Key Leadership Understanding

Leaders have visions and communicate them to others.

Math/Science Concepts Applicable

Simultaneous equations

Time Required

30 minutes

Equipment/Logistics

Ropes or raffia string to mark out out-of-bound areas which serve as obstacles in the “mine field”

Blindfolds

Chairs, tables, or any furniture as large obstacles

Outdoor or open space

Game Objective

Be the first group to complete the task which includes crossing over a “mine field” and solving simultaneous equation

Group Size

Eight to 15

Procedure

The game can be played indoors (in a room), or outdoors (a field or open spaces).

Before the activity is conducted, the facilitator sets up the entire game area, positioning some chairs and tables as obstacles and marking out the out-of-bound areas to create a “mine field”. Facilitators are to be stationed inside the game area throughout the game to ensure the team does not cheat, and reinforce safety.

Each group is given about five minutes to discuss and develop a game strategy. Everyone will then be blindfolded except for one member which the team selects to be allowed to see in the game. No one including the “seeing” player is allowed to speak. The “seeing” member will guide each blindfolded member across the “mine field”.

There is a time limit set for the entire team to cross the “mine field”. The “seeing” member has to ensure that no one touches the obstacles or steps on out-of-bound areas set aside as “mines”. Every time a player touches an obstacle or steps on an out-of-bound area, the player will be given three simultaneous equations to solve as a penalty after the entire team crosses the “mine field”.

Once the entire team makes it through the “mine field”, they are then allowed to take off their blindfolds and work on the simultaneous equations that all the team members have accumulated. The game ends when all the equations are solved.

Possible Variations

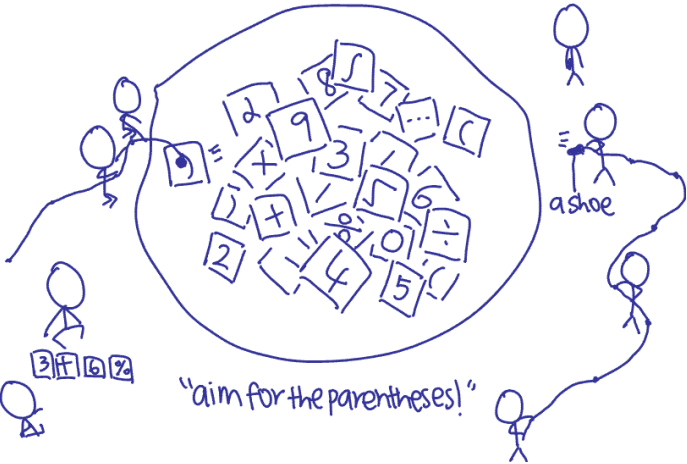
Background music can be played loudly (if indoor) to distract the team in the game.

Some or all the group members are permitted to speak.

Process

- How difficult was it to cross the “mine field” without vision?
- How critical was it to have a guiding voice?
- How did you (as the “seeing” member) successfully guide your team members across the “mine field”?

Game 22: Fishing



Leadership Game 22: Fishing

Key Leadership Understanding

Leaders have to balance between being pragmatists and idealists.

Math/Science Concepts Applicable

Basic addition, subtraction, multiplication, division and physics for the building of fishing device.

Equipment/Logistics

Drinking straws

Scotch tape

Metal bendable wires

Tags with numbers and mathematical symbols and signs

Rings to be attached to tags for hooking purposes

Judge to decide on complexity of equation

Time Required

One hour or more

Game Objective

Be the first group to create the most complicated equation

Group Size

Four to five

Procedure

A boundary is created to place all the tags. The tags will have numbers

or mathematical symbols and signs (addition, subtraction, division, multiplication, differentiation, bracket, equal or percentage sign, etc.). Ensure that a combination of the tags can be used to form mathematical equations (e.g., the five tags – 13, 17, –, +, and 30 – can be used to form equations such as “ $30 - 17 = 13$ ”).

Each group is given metal bendable wires, rings and scotch tape. They have to use these items to build a hooking device for fishing out the tags to build their mathematical equations. They can only fish from a particular distance.

Within the given time and regardless of the number of equations they come up with, the winning group is the one with the equation considered most complex by the judge.

Possible Variations

Teams are allowed to trade tags if they wish to.

Process

- Did you succumb to the pressure of winning and completing the game in the time given, compromising on the complexity required?
- Did you encourage those fishing out the tags which is not an easy task?

Practical Application

- What is your stand on issues in your present organisation if the costs were high?
- How can you achieve high standards without overlooking the practical aspects?

Game 23: The Olympics of Science and Math

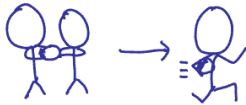
1. Fork throw/cotton ball putt



2. Water sponge squeeze



3. Balloon relay



How far do you think you can go?

How accurate were your estimates?

Leadership Game 23: The Olympics of Science and Math

Key Leadership Understanding

Leaders go the distance. They take on an Olympian spirit and perform at their best.

Math/Science Concepts Applicable

Weight, volume and distance

Equipment/Logistics

Work sheet listing the “Olympic” events

Scales

Marbles

Cotton balls

Straws

Paper plates

Rulers

Sponges

Water containers

Small boxes

Coins

Time Required

About one hour

Game Objective

Be the group that accumulates the best total score from all the events

Group Size

One to three

Procedure

This activity is a series of mini-games revolving around the concept of measurement, estimation and approximation.

Possible mini-games include fork throw, water sponge squeeze, cotton ball putt and relay. The players are given a sheet listing the “Olympic” events, of which they will set a goal by estimation.

Examples include distance fork can reach, amount of time needed to do the relay, etc. They will then rotate among the various stations to measure how close they are to their estimate. The player with the most accurate estimates will be the gold medalist. Standard metric or imperial units may be used.

Process

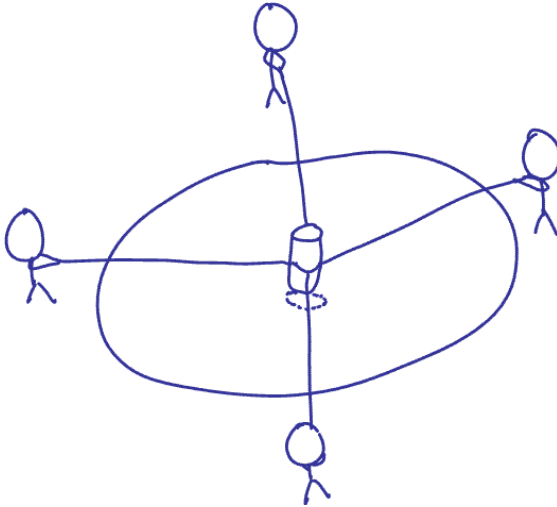
- How did you feel participating in these events?
- Did you try your best in your event?
- How do you think you have measured up to the goals that you have set?

Practical Application

- How can you exercise leadership with limited resources, support and power?
- What level of commitment and action do people see from you in your organisation?

Game 24: Vector Pull

Try to move the bottle into the mark in the middle of the circle by shifting the raffia tied to it.



“Move a bit more
to your left!”

Leadership Game 24: Vector Pull

Key Leadership Understanding

A leader listens to every member and searches for the best way forward.

Math/Science Concepts Applicable

Vectors

Time Required

20 minutes

Equipment/Logistics

Four ropes or pieces of string
Raffia string to create boundary
Bottle/ring
Chalk

Game Objective

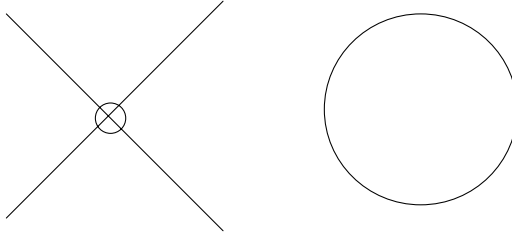
Be the group to move the bottle into the designated area within the shortest time possible

Group Size

Four to 10

Procedure

Tie the four strings to the bottle and use some raffia to create a boundary around the bottle.



Draw out a marking within the circle using chalk, where the bottle is to be shifted to.

Using the four strings and not stepping into the area bounded by the circle, try to move the bottle into the centre of the circle as marked out in the shortest time possible. The bottle must not topple over.

Possible Variations

Other items, aside from a bottle, can be used

Process

- How did you cooperate as a team to move the bottle in the direction you wanted?
- Was there anyone who stepped up as a leader to direct the group?
- Were there times when you felt that the task was impossible? Why?

Practical Application

- How can we keep people moving forward to achieve a goal?
- Have you experienced a situation in a group task when everyone talked and nobody cared to listen?